SYSTEM AND METHOD FOR HIERARCHICAL SWITCHING

ABSTRACT OF THE INVENTION

A system and method have been provided for hierarchically
5 arbitrating in a broadband information switching network. The method
promotes the fair and efficient distribution of information packets across
the switch fabric that ultimately permits the switch to maximally match
information packets to switch output addresses, at faster rates and higher
throughput. The method comprises: accepting variably sized information
10 packets at a plurality of switch inputs, that address a plurality of switch
outputs; at each switch input, queuing the information packets into a
plurality of queues; parsing the information packets into units of one cell;
simultaneously arbitrating between each switch output and a plurality of
available switch inputs, where an available input is defined to have at
15 least one queue with an information packet addressing that particular
switch output; selecting a queue; locking the link between switch inputs
and switch outputs; and, transferring information packets across the links
in units of one cell per master decision cycle.